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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,009	12/19/2001	Hong Sung Song	049128-5055	8778

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WASHINGTON, DC 20004

EXAMINER
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AWAD, AMR A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/021,009

Applicant(s)

SONG, HONG SUNG

Examiner

Amr Awad

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-13 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. All independent claims recite "(n-2)th data", "nth gate line" and "(n-2)th gate line". These terms are indefinite because there is no description of what the value "n" is referring to. Also, by considering n an integer, the term "n-2" when n is equal to 0, 1 or 2 will be equal to -2, -1 or 0 which can not be valid values for data or gate lines. Furthermore, the data lines in figure 6 are 1-n and the gate lines are 1-m, which means that the gate and data lines cannot be use the same reference. In addition, Examiner is not clear on the different between the term "data supply channel" and "data supplying channel". Such recitations make the claims indefinite and not clear to examine the claims on the merit. Examiner respectfully requests an explanation and/or correction. Finally, the paragraph "conducting a data supply channel for the liquid crystal cells connected to an nth gate line...connected to the nth gate line" in claim 1 seems to be duplicated, which adds to the ambiguity of the claim.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyahara et al. (US patent NO. 6,075,507; hereinafter referred to as Miyahara) in view of Asada et al. (US patent NO. 5,867,141; hereinafter referred to as Asada).

As best understood by the Examiner, Miyahara (figures 4-7) teaches A method of driving a liquid crystal display panel of a dot inversion system having liquid crystal cells arranged at intersections between a plurality of data lines (S1-Sn) and a plurality of gate lines (G1-Gm) in a matrix array (col. 4, lines 6-34), comprising the steps of:

Supplying the data lines with (n-2)th data corresponding to the liquid crystal cells connected to an (n-2)th gate line (col.4, line 58 through col. 5, line 10);

Conducting a data supply channel for the liquid crystal cells connected to an nth gate line such that the (n-2)th data is supplied to the liquid crystal cells connected to the nth gate line (col. 5, line 57 through col. 6, line 22); and

Conducting a data supplying channel for the liquid crystal cells connected to the (n-2)th gate line such that the (n-2)th data is supplied to the liquid crystal cells connected to the (n-2)th gate line (col. 6, lines 18-58).

Miyahara does not expressly teach conducting the data supply channel and conducting the data-supplying channel are performed simultaneously.

However, Asada teaches a driving method for liquid crystal display wherein the data supply channel and data-supplying channel are performed simultaneously (col. 13, lines 31-38).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Asada for simultaneously applying data to be incorporated to Miyahara's device so as motivated by Asada, to be able to permit a competent image quality to be secured with a stable high contrast (col. 3, lines 62-65).

As to claim 2, Asada teaches a first and second gate lines of the plurality of gate lines are charged at every frame with data signals applied at a blanking interval (abstract and col. 5, lines 18-38).

As to claim 3, Miyahara teaches a polarity inversion of the data signals applied to the liquid crystal cells connected to the first and second gate lines is made in at least two clock time intervals prior to an application of an active data signal (col. 5, lines 11-29).

As to claim 4, Asada teaches that the gate and data control signals for applying data to the liquid crystal cells connected to the first and second gate lines are applied in at least two clock time intervals before the gate and data control signals become effective data (as can be seen in figures 5-7, Asada shows more than one clock timing).

As to independent claim 5, the claim is similar to independent claim 1 except that claim 1 recites a pre-charging controller, which is fairly similar to the blanking period shown in figure 5 of Asada's device.

As to claims 7-9, the claims are similar to claims 2-4 respectively, and would be analyzed as previously discussed with respect to claims 2-4.

As to claims 10-13, the claims are substantially similar to claims 5 and 7-9 respectively, and would be analyzed as previously discussed with respect to claims 5 and 7-9 above.

### ***Allowable Subject Matter***

6. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hashimoto et al. (US patent NO. 6,072,457) teaches a driving method in which the image signal can be input into a panel having a smaller number of rows.

An et al. (US patent NO. 6,335,719) teaches a method for driving liquid crystal display in dot inversion.

Lebrun et al. (US patent NO. 6,359,608) teaches driving flat screen displays using pixel pre-charging.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday-Friday, between 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras can be reached on (703)305-9720. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4750.

A handwritten signature in black ink, appearing to read "Amr Ahmed Amr", with a large, sweeping flourish extending from the end of the signature.

12-28-2003

A.A.